PST - Standard UI Developer Course Content

PART 1: HTML & JAVASCRIPT BASICS

1. HTML Fundamentals

- Introduction to Web Development (How browsers work, HTML role)
- Basic Structure of an HTML Document (<!DOCTYPE>, <html>, <head>, <body>)
- Headings, Paragraphs, Line Breaks
- Text Formatting (<b>, <i>, <u>, ,)
- Lists (Ordered, Unordered, Definition Lists)
- Links (<a> tag, relative vs absolute paths, target attribute)
- Images (<img>, alt attribute, paths)
- Tables (rows, columns, colspan, rowspan, table styling)
- Forms (text fields, radio, checkbox, textarea, select, file upload, submit/reset)
- Semantic HTML (<header>, <nav>, <main>, <article>, <section>, <footer>)
- Multimedia (<audio>, <video>, <iframe>)
- HTML5 Input Types (date, email, number, color, range, etc.)

2. CSS Basics (for HTML styling)

- Inline, Internal, External CSS
- Colors, Fonts, Backgrounds
- Box Model (margin, border, padding, content)
- Positioning (static, relative, absolute, fixed, sticky)
- Flexbox basics
- Basic animations & transitions

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3. JavaScript Basics

- Introduction to JavaScript (how it runs in browser)
- Adding JS to HTML (<script> tag, external JS)
- Variables (var, let, const)
- Data Types (string, number, boolean, null, undefined, object)
- Operators (arithmetic, comparison, logical)
- Conditional Statements (if, else if, switch)
- Loops (for, while, do...while, for...of, for...in)
- Functions (declaration, parameters, return values)
- Scope (global vs local, block scope with let/const)
- Arrays (creation, methods: push, pop, shift, unshift, splice, slice)
- Objects (properties, methods, dot vs bracket notation)

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4. DOM (Document Object Model) Basics

- What is DOM? (tree structure of HTML)
- Selecting elements (getElementById, getElementsByClassName, querySelector)
- Changing content (innerText, innerHTML, textContent)
- Changing styles (style property, class manipulation)
- Event handling (onclick, addEventListener)
- Form validation basics with JS

PART 2: ADVANCED HTML & JAVASCRIPT

1. Advanced HTML & CSS

- HTML5 APIs (Geolocation, LocalStorage, SessionStorage, Canvas, Drag & Drop)
- Responsive Design (Media Queries, Mobile-first design)
- CSS Grid Layout
- CSS Flexbox (advanced patterns)
- CSS Animations & Transitions
- Using external CSS libraries (Bootstrap, Tailwind basics)

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2. Advanced JavaScript Concepts

- ES6+ Features
  - Template Literals
  - Arrow Functions
  - Default & Rest Parameters
  - Spread Operator
  - Destructuring Assignment
  - Modules (import, export)
- Functions Advanced
  - Callbacks
  - Closures
  - Higher Order Functions
  - Immediately Invoked Function Expressions (IIFE)
- Objects & OOP

  - Constructor functions
  - class syntax & inheritance
  - this keyword deep dive
  - Prototype & prototype chain
- Error Handling
  - try...catch
  - throw custom errors

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3. DOM Advanced

- Creating and removing elements dynamically (createElement, appendChild, remove)
- Event bubbling & capturing
- Event delegation pattern
- Forms advanced validation (regex, custom error messages)
- Working with attributes & dataset (getAttribute, setAttribute, dataset)

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4. JavaScript Async Programming

- Synchronous vs Asynchronous execution
- setTimeout, setInterval
- Callbacks & Callback Hell
- Promises (then, catch, finally)
- async/await
- Fetch API (GET, POST requests)
- Working with JSON

5. Browser APIs

- LocalStorage & SessionStorage
- Cookies (basics)
- Geolocation API
- Canvas API (drawing shapes, animations)
- Web Workers basics

6. Advanced Topics (For Modern Web Apps)

- JavaScript Modules (ESM, CommonJS basics)
- Package Managers (npm, yarn)
- Bundlers (basic intro: webpack, Vite)
- Using REST APIs with JavaScript
- Single Page Applications (conceptual intro)
- Security basics (XSS prevention, input sanitization)